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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,685	01/24/2002	Pavan M. Kumar	PW 276911 P12610	8409

909 7590 11/06/2002
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EXAMINER

NGUYEN, DANNY

ART UNIT PAPER NUMBER

2836

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,685

Applicant(s)

KUMAR ET AL.

Examiner

Danny Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et. al. (USPN 6,130,526) in view of Henze (USPN 4,924,170).

Regarding to claims 1-2, 19-20, 26, Yang et. al. disclose a power supply regulator (see fig. 1) comprise a controller (a threshold detector 26 and comparator 14) to cause the regulator to produce a regulated input voltage, the regulator coupled to a power source, and the regulator coupled to a micro-electronics device (a notebook or microprocessor, see col. 1, lines 23-26) for supplying the regulated input voltages to the micro-electronic device; the controller is configured to produce the regulated input voltages for the input voltage required value; the controller is configured to maintain each the regulated input voltage within a input voltage range bounded by a constant upper limit (reference voltage inputted to the threshold detector) and a lower limit (a detected voltage). However, Yang et. al. do not disclose the lower limit is determined in accordance with by a gain factor in accordance with a voltage current load line. Henze discloses that the lower limit is determined in accordance with by a gain factor in accordance with a voltage current load line (current sensor 52, see fig. 5). It would have been obvious to one having skill in the art at the time the invention was made to

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combine the regulator circuit of Yang et. al. a current sensor as taught by Henze in order to maintain the output at a desired value with a high precision. Yang et. al. and Henze do not disclose the power supply regulator having a multiple input voltage supplies applied to the regulator circuits. However, it would have been obvious to one having skill in the art at the invention was made to utilize the circuitry of Yang et. al. and Henze with a multiple input voltage supplies applied to regulator circuits having the same structure to limit the power consumption and cost reduction since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. V. Bemis Co.*, 193 USPQ 8.

Regarding to claims 21 and 27 repeat the limitation of claim 2, therefore rejected accordingly.

Regarding to claims 3 and 5, Yang et. al. disclose the controller (threshold detector 26 and amplifier 14) is further configured to determine and adjust the gain factor in order to produce the regulated input voltages according to the load line, wherein the load line is a linear, a non-linear, and a constant power relationship for a plurality of the regulated voltage values (when the micro-processor is switched from sleeping mode to waking mode, power supply changes to meet the requirement, see col. 1, lines 25-35), and the lower limit is equal to the lesser of the products of a tolerance level multiplied by each input voltage value (also see col. 1, lines 31-34).

Regarding to claims 22- 24, 28- 30 repeat the limitations of claims 3- 5, therefore rejected accordingly,

Regarding to claims 6, 12, 18, and 25, Yang et. al. disclose that the non-linear load line includes discontinuity corresponding to an intermediate current value between zero and maximum, associated with the microelectronic device (see fig. 5a).

Regarding to claims 7 and 13, Yang et. al. disclose a regulator (see fig. 1) comprises a controller (threshold detector 26 and comparator 14), wherein an input of the comparator coupled to the output of the threshold detector; a switch (12) coupled to the controller and operable in response to a signal provided by the controller, the switch being connected to an inductor (18), a diode (22), and an output capacitor (20) arranged in a network (impedances 24 and 28) that produces a load current in response to an input source voltage received via the switch, the network having an output coupled to a micro-electronic device (load which is a notebook computer or microprocessor, see col. 1, lines 23-26) for supplying the regulated input voltage to the device; wherein the controller is configured to produce the regulated input voltage by varying the duty cycle (adjusted by the pulse width modulator, see col. 2, lines 1-10) of the switch in accordance with a voltage-current load line, and the controller is configured to maintain the regulated input voltage within an input range bounded by a constant upper limit (reference voltage inputted to the threshold detector 26) and a lower limit (detected voltage); wherein the upper limit is a constant for each of the input voltage values; and the lower limit is computed by the controller in order to maintain the regulated input voltage according to the voltage current load line. Yang et. al. do not disclose that a current sensed feed-back network. Henze discloses a current sensed feedback network (see fig. 5, current sensor 52). It would have been obvious to one having skill in the art

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at the time the invention was made to combine the regulator circuit of Yang et. al. with the circuit with a current sensor as taught by Henze in order to determine a gain factor of the feedback current and maintain the output at a desired value with a high precision. Yang et. al. and Henze do not disclose the power supply regulator having a multiple input voltage supplies applied to the regulator circuits. However, it would have been obvious to one having skill in the art at the invention was made to utilize the circuitry of Yang et. al. and Henze with a multiple input voltage supplies applied to regulator circuits having the same structure to limit the power consumption and cost reduction since it has been held that mere duplication of the essential working part of a device involves only routine skill in the art. *St. Regis Paper Co. V. Bemis Co.*, 193 USPQ 8.

Regarding to claims 9, 11,15 and 17, repeat the limitations of claim 3 and 5, therefore rejected accordingly.

Regarding to claims 10 and 16, Yang et. al. disclose that the controller (threshold detector 26 and comparator 14) computes a gain factor to maintain the regulated input voltage according to a total power voltage-current load line.

Regarding to claims 8 and 14, Yang et. al. disclose the network is arranged according to a bulk converter (converter 10).

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (703)-305-5988. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

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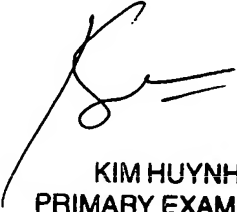
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Circus can be reached on (703)-308-3119. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9318 for regular communications and (703)-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.

DN

October 17, 2002

DN

 11/01/02
KIM HUYNH
PRIMARY EXAMINER